L31 ANSWER 1 OF 5 CA COPYRIGHT 1997 ACS DUPLICATE 1
IC ICM C12N001-10
CC 16-4 (Fermentation and Bioindustrial Chemistry)
ST ***Tetrahymena*** enzyme fermn
IT Fermentation
Tetrahymena patula
Tetrahymena rostrata
Tetrahymena setosa
Tetrahymena
(cultivation of lipid-dependent ***tetrahymenids*** and the prodn. of enzymes and polyunsatd. fatty acids)
IT Enzymes
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(cultivation of lipid-dependent ***tetrahymenids*** and the prodn. of enzymes and polyunsatd. fatty acids)
IT Soybean meal
(prodn. of enzymes and polyunsatd. fatty acids by the cultivation of lipid-dependent ***tetrahymenids*** on)
IT Milk
(skim; prodn. of enzymes and polyunsatd. fatty acids by the cultivation of lipid-dependent ***tetrahymenids*** on)
IT Fatty acids, preparation
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(polyunsatd., cultivation of lipid-dependent ***tetrahymenids*** and the prodn. of enzymes and polyunsatd. fatty acids)
IT 9001-22-3P, .beta.-Glucosidase 9001-77-8P, Acid phosphatase
9025-34-7P, .beta.-Fucosidase 9025-82-5P, Phosphodiesterase
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(cultivation of lipid-dependent ***tetrahymenids*** and the prodn. of enzymes and polyunsatd. fatty acids)

=>

L97 ANSWER 1 OF 14 CA COPYRIGHT 1997 ACS
AB A process for the cultivation of fastidious ***lipid*** -requiring Tetrahymenas, esp. T. setosa, and processes for the prodn. of valuable biol. products, esp. enzymes, in which the enzymes are secreted or cell-assocd., and polyunsatd. fatty acids, are disclosed. The ***lipid*** -requiring Tetrahymenas may be cultured on skim milk medium or cottonseed meal medium.
AN 124:315180 CA
TI Process for the cultivation of ***lipid*** -dependent tetrahymenids and a process for the production of biogenic products of ***lipid*** -dependent tetrahymenids
IN Kiy, Thomas; Marquardt, Ruediger; Kuehlein, Klaus
PA Hoechst A.-G., Germany
SO Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
PI EP 708176 A2 960424
DS R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE
AI EP 95-116245 951016
PRAI DE 94-4437615 941021
DT Patent
LA German

L97 ANSWER 2 OF 14 BIOSIS COPYRIGHT 1997 BIOSIS
AN 96:94864 BIOSIS
DN 98666999
TI On the presence of glycosylphosphatidylinositol-anchored proteins in plants.
AU Thompson G A Jr; Morita N; Okuyama H; Kim Y; Ko Y-G; Hung C-Y
CS Dep. Botany, Univ. Texas, Austin, TX 78713, USA
SO Kader, J.-C. and P. Mazliak (Ed.). Plant lipid metabolism; 11th International Meeting on Plant Lipids, Paris, France, June 26-July 1, 1994. xx+588p. Kluwer Academic Publishers: Dordrecht, Netherlands; Norwell, Massachusetts, USA. 0 (0). 1995. 227-229. ISBN: 0-7923-3250-4
DT Book; Conference
LA English

L97 ANSWER 3 OF 14 CA COPYRIGHT 1997 ACS
AB A protein kinase and an acidic phosphoprotein ***phosphatase*** were purified from ***Tetrahymena*** pyriformis. These enzymes phosphorylate and dephosphorylate ornithine decarboxylase (ODG) in this microorganism. Dephosphorylated ODG can be fully reactivated allosterically by purine nucleosides or nucleosides. L-Asparaginase of T. pyriformis exhibits protein kinase activity and is autophosphorylated on tyrosine residues. Phosphorylation-dephosphorylation of L-asparaginase resulted in complete loss or activation by more than 10-fold of its catalytic activity. Both native and dephosphorylated forms of L-asparaginase are inactivated by phospholipase C and this inactivation can be reversed by addn. of ***lipids*** . A model for the regulation of ODG and L-asparaginase in T. pyriformis is proposed as well.
AN 116:123767 CA
TI Enzyme post-translational modification
AU Kyriakidis, D. A.
CS Fac. Chem., Aristotelian Univ. Thessaloniki, Thessaloniki, 54006, Greece

SO Rev. Roum. Biochim. (1991), 28(3-4), 137-42
CODEN: RRBCAD; ISSN: 0001-4214
DT Journal
LA English

L97 ANSWER 4 OF 14 BIOSIS COPYRIGHT 1997 BIOSIS
AN 92:113969 BIOSIS
DN BR42:53969
TI ENZYME POST-TRANSLATIONAL MODIFICATION.
AU KYRIAKIDIS D A
CS LAB. BIOCHEM., FAC. CHEM., ARISTOTELIAN UNIV. THESSALONIKI, THESSALONIKI, GREECE.
SO 8TH BALKAN BIOCHEMICAL AND BIOPHYSICAL DAYS, CLUJ-NAPOCA, ROMANIA, SEPTEMBER 10-14, 1990. REV ROUM BIOCHIM 28 (3-4). 1991. 136-142.
CODEN: RRBCAD ISSN: 0001-4214
LA English

L97 ANSWER 5 OF 14 BIOSIS COPYRIGHT 1997 BIOSIS
AB L-Asparaginase of ***Tetrahymena*** pyriformis is a lipoprotein (Tsirka, S.A.E. and Kyriakidis, D.A. (1988) Mol. Cell. Biochem. 83, 147-1550) with relative Mr approximately 200 kDA and one subunit size of 39 kDa. This enzyme also exhibits protein kinase activity and it is autophosphorylated in tyrosine residues. Phosphorylation-dephosphorylation of L-asparaginase resulted in complete loss or activation by more than 10-fold of its catalytic activity. Both native and dephosphorylated forms of L-asparaginase are inactivated by phospholipase C and this inactivation can be reversed by the addition of ***lipids*** . Based on these results a working hypothesis is suggesting that L-asparaginase of T. pyriformis exists in four intercovertible forms: Form A, phosphorylated complexed with ***lipids*** , form HA, dephosphorylated (highly active), form I, free of ***lipids*** (inactive) and form B, free of ***lipids*** and phosphate.
AN 89:448910 BIOSIS
DN BA88:97182
TI A MODEL FOR THE REGULATION OF THE ACTIVITY OF L ASPARAGINASE KINASE ENZYME OF ***TETRAHYMENA*** -PYRIFORMIS.
AU TSIRKA S-A E; KYRIADKIDIS D A
CS LAB. BIOCHEM., FAC. CHEM., SCH. SCI., ARISTOTELIAN UNIV. THESSALONIKI, THESSALONIKI 54006, GREECE.
SO BIOCHEM INT 19 (1). 1989. 9-18. CODEN: BIINDF ISSN: 0158-5231
LA English

L97 ANSWER 6 OF 14 CA COPYRIGHT 1997 ACS DUPLICATE 1
AB The carbohydrate structures of acid phosphatase and .alpha.-glucosidase secreted into culture medium by T. pyriformis strain W were studied. Their asparagine-linked sugar chains were quant. liberated as radioactive oligosaccharides from their polypeptide moieties by controlled hydrazinolysis followed by N-acetylation and NaB3H4 redn. The approx. amts. of total sugar chains liberated from 1 mol each of acid phosphatase and .alpha.-glucosidase were 6 and 4 mol, resp. Paper electrophoresis revealed that only neutral oligosaccharides were obtained from both enzymes. The oligosaccharide fraction from acid phosphatase was sepd. into 7 components by Bio-Gel P-4 column chromatog. whereas that from .alpha.-glucosidase was resolved into 3 components. The structures of these oligosaccharides were detd. by sequential glycosidase digestion in combination with methylation anal. The

sugar chains of the 2 enzymes could be primarily classified as high-mannose-type oligosaccharides. However, they had the following characteristic features: (1) their common core was not the usual Man5-GlcNAc2 structure; it was Man3-GlcNAc2; (2) some of the sugar chains of acid phosphatase had 1-3 glucose residues linked to the nonreducing terminal Man.alpha.1.fwdarw.2 residue. The structural characteristics of the sugar moieties of the 2 enzymes indicated that they might be produced by the so-called alternate pathway, in which ***lipid*** -linked Glc3-Man5-GlcNAc2 functions as an oligosaccharide donor.

AN 103:209842 CA
TI Carbohydrates of lysosomal enzymes secreted by Tetrahymena pyriformis
AU Taniguchi, Takahiro; Mizuochi, Tsuguo; Banno, Yoshiko; Nozawa, Yoshinori; Kobata, Akira
CS Inst. Med. Sci., Univ. Tokyo, Tokyo, 108, Japan
SO J. Biol. Chem. (1985), 260(26), 13941-6
CODEN: JBCHA3; ISSN: 0021-9258
DT Journal
LA English

L97 ANSWER 7 OF 14 MEDLINE
AB Aiming at an improvement of the screening of toxic substances in biological materials and environment, the following biochemical indices were studied by means of the ***Tetrahymena*** pyriformis as a testing object: total protein, total ***lipids*** , glucose, lactate dehydrogenase (E.C.1.1.1.27.), gamma-glutamyl transferase (E.C.2.3.2.2.), aspartate aminotransferase (E.C.2.6.1.1.), alanine aminotransferase (E.C.2.6.1.2.), acetyl cholinesterase (E.C.3.1.1.7.), butyryl cholinesterase (E.C.3.1.1.8.), alkaline ***phosphatase*** (E.C.3.1.3.1.), acid ***phosphatase*** (E.C.3.1.3.2.) and alpha-amylase (E.C.3.2.1.1.). The study was conducted in the period of the population growth in an experimental medium with the minimum content of nutrients within the 96 hours of cultivation. It has been derived from the results that most of the enzymes are at the top of their activity in the early logarithmic stage of growth, i. e. in the period immediately following the log stage of population growth when the cells are getting ready for intensive division and growth; another peak activity period is the logarithmic growth stage--alkaline ***phosphatase*** and acid ***phosphatase*** are an exception with the culmination of activity in the stationary stage of population growth.

AN 85116858 MEDLINE
TI [Selected biochemical indicators in the protozoan Tetrahymena pyriformis].
Vybrane biochemicke ukazovatele u prvoka Tetrahymena pyriformis.
AU Nistiar F; Hrusovsky J; Mojzis J
SO VETERINARNI MEDICINA, (1984 Dec) 29 (12) 739-46.
Journal code: XBP. ISSN: 0375-8427.
CY Czechoslovakia
DT Journal; Article; (JOURNAL ARTICLE)
LA Slovak
FS Priority Journals
EM 8505

L97 ANSWER 8 OF 14 CA COPYRIGHT 1997 ACS DUPLICATE 2
AB Glucose 6- ***phosphatase*** , a microsomal membrane-bound enzyme,

was dependent on the phys. state of the subfraction's ***lipids*** fractionated from the phase-sepd. smooth-surfaced microsomal membranes of a unicellular thermotolerant ***Tetrahymena*** pyriformis. Fatty acid desaturase activity was also found in the microsomes. The enzyme required O2 and NADH or NADPH and was inhibited by CN-, and its activity was increased by the temp. shift. The substrate specificity of CDP-choline:1,2-diacylglycerol cholinephosphotransferase and CDP-ethanolamine:1,2-diacylglycerol ethanolaminephosphotransferase was not altered by changing the temp. The phospholipid head group and acyl chain compns. were markedly changed during the temp. adaptation, but there was no remarkable temp. dependence in these 2 phospholipid-synthesizing enzymes. Perhaps direct desatn. of phospholipids may play an important role in the regulation of fatty acyl chain compn., but the final step of de novo biosynthesis of phospholipids does not participate in the thermally induced modification of the profile of membrane ***lipid*** compns. for temp. adaptation.

AN 96:157769 CA

TI Biochemical studies on molecular mechanism for environmental adaptation of membrane ***lipids*** . Modification of membrane physical properties and regulatory mechanism of phospholipid acyl chain and polar head group compositions during thermal adaptation

AU Kameyama, Yasunaga

CS Sch. Med., Gifu Univ., Gifu, Japan

SO Gifu Daigaku Igakubu Kiyo (1981), 29(7), 1165-92
CODEN: GDIKAN; ISSN: 0072-4521

DT Journal

LA Japanese

L97 ANSWER 9 OF 14 CA COPYRIGHT 1997 ACS DUPLICATE 3

AB Thermally induced phase sepn. occurred in microsomal membranes of T. pyriformis, as obsd. by freeze-fracture electron microscopy. The phase-sepd. membranes which were produced by chilling the cells were fractionated by sucrose d. gradient centrifugation. When ***Tetrahymena*** was grown in the presence of palmitic acid, cells rapidly incorporated the fatty acid into their phospholipids. The resulting endoplasmic reticulum contg. a high level of palmitic acid was more susceptible to thermotropic phase sepn. Despite the alterations in fatty acid compn., the cells retained a normal growth rate, appearance, and cell motility. Smooth microsomes isolated from palmitic acid-supplemented cells were sonicated and fractionated into 3 major subfractions. Fraction I had a lower buoyant d. and was rich in phospholipids and satd. fatty acids, whereas Fraction III with a higher d. was rich in proteins and contained more unsatd. fatty acids in the phospholipids. A significant change was also obsd. in the polar head compn. of phospholipids in these fractions. ESR anal. showed that the extd. ***lipids*** from Fraction III were more fluid than those from Fraction I. In addn., the motion of the spin probe in the native membranes was more restricted than in extd. ***lipids*** . Apparently, the ***lipid*** sepn. causes squeezing out of the membrane proteins from the less fluid to the fluid areas. Arrhenius plots of the specific activities of glucose-6- ***phosphatase*** show a break at 23.degree. for Fraction I activity and a bend at 28.degree. for fraction III activity. The apparent energies of activation above and below the phase transitions are 9.6 .times. 103 and 17.2 .times. 103 cal/mol for Fraction I and 8.4 .times. 103 and 12.3 .times. 103 cal/mol for fraction III, resp. Similar plots for

palmitoyl-CoA desaturase show a slight bend at 31.degree. in both Fractions I and III, with energies of activation above and below this discontinuity being 6 .times. 103 and 1 .times. 104 cal/mol, resp.

AN 94:43835 CA
TI Thermally induced heterogeneity in microsomal membranes of fatty acid-supplemented Tetrahymena: ***lipid*** composition, fluidity and enzyme activity
AU Kameyama, Yasunaga; Ohki, Kazuo; Nozawa, Yoshinori
CS Sch. Med., Gifu Univ., Gifu, 500, Japan
SO J. Biochem. (Tokyo) (1980), 88(5), 1291-303
CODEN: JOBIAO; ISSN: 0021-924X
DT Journal
LA English

L97 ANSWER 10 OF 14 CA COPYRIGHT 1997 ACS
AB At several temps., specific activities of adenylate cyclase in ergosterol-supplemented T. pyriformis membranes were much lower than those of unmodified membranes. Hexadecyl glycerol supplementation altered transition temps. for the membrane-bound ATPase of pellicles, apparently because of a change in membrane fluidity. Glucose 6-phosphatase activity and transition temp. were altered by palmitate supplementation. In contrast, 5'-nucleotidase did not respond to changes in membrane phys. properties. Previous studies on effects of ergosterol, hexadecyl glycerol, and other agents are discussed.

AN 94:205116 CA
TI Modification of ***lipid*** composition and membrane fluidity in Tetrahymena
AU Nozawa, Yoshinori
CS Sch. Med., Gifu Univ., Gifu, Japan
SO Membr. Fluid.: Biophys. Tech. Cell. Regul., [Proc. Satell. Symp.] (1980), Meeting Date 1979, 399-418. Editor(s): Kates, Morris; Kuksis, Arnis. Publisher: Humana, Clifton, N. J.
CODEN: 45NQAW
DT Conference
LA English

L97 ANSWER 11 OF 14 BIOSIS COPYRIGHT 1997 BIOSIS
AB The enzyme systems responsible for the synthesis of triacylglycerol and phospholipids in T. pyriformis were characterized. Formation of diacylglycerophosphate from glycerophosphate by microsomes occurred mainly via 1-acylglycerophosphate. 1-Acylglycerophosphate ***phosphatase*** activity was 3-11 times higher than the diacylglycerophosphate ***phosphatase*** activity. The former was localized in microsomes while the latter resided mainly in the soluble fraction. 1-Acylglycerol was acylated at both 2- and 3-positions to form 1,2- and 1,3-diacylglycerols as intermediates and further to form triacylglycerol by microsomal acyltransferase systems. Triacylglycerol synthesis from added acetate increased and phospholipid synthesis decreased both in the stationary phase of growth and under anaerobic conditions. The mechanisms for accumulation of triacylglycerol in these 2 situations are different. At the stationary phase of growth, the accumulation of triacylglycerol is accompanied by increases in the acyltransferase activities involved in triacylglycerol synthesis and a decrease in the CDP-choline:1,2-diacylglycerol cholinephosphotransferase (EC 2.7.8.2) activity. In addition, diacylglycerophosphate

phosphatase activity increased, 1-acylglycerophosphate ***phosphatase*** activity decreased and acyl-CoA:1-acylglycerol-3-phosphocholine O-acyltransferase (EC 2.3.1.23) activity remained the same after the cells entered the stationary phase. In contrast to the results obtained with stationary phase cells, no significant changes were observed in the levels of any of these enzymes when the cells were shifted to anaerobic conditions despite the fact that triacylglycerol synthesis increased significantly. Fluctuations in the activities of the enzymes catalyzing triacylglycerol and phospholipid formation can be brought about by changes in ***Tetrahymena*** growth conditions.

AN 78:227707 BIOSIS
DN BA66:40204
TI REGULATION OF TRI ACYL GLYCEROL AND PHOSPHO ***LIPID*** SYNTHESIS IN ***TETRAHYMENA*** .
AU OKUYAMA H; KAMEYAMA Y; YAMADA K; NOZAWA Y
CS FAC. PHARM. SCI., NAGOYA CITY UNIV., 3-1 TANABEDORI, MIZUHO, NAGOYA, AICHI, JPN.
SO J BIOL CHEM 253 (10). 1978 3588-3594. CODEN: JBCHA3 ISSN: 0021-9258
LA English

L97 ANSWER 12 OF 14 CA COPYRIGHT 1997 ACS DUPLICATE 4
AB A sedimentable form of acid phosphatase (I) of T. pyriformis was solubilized by Triton X 100. The total activity in the insol. cell fraction increased almost 200% upon solubilization with Triton X 100 or Nonidet P 40. Removal of membrane ***lipids*** and Triton X 100 from the particulate wash soln. with a CHCl3 extn. resulted in nonspecific I aggregation which was reversible upon addn. of Triton X 100. The results indicate that I is an integral membrane protein. The pH optima for this particulate bound I were 3.5 with o-carboxyphenyl phosphate and 4.0 with p-nitrophenyl phosphate as substrates. The Km values for each substrate were 3.1 and 0.031mM, resp.

AN 84:70815 CA
TI Release and activation of a particulate bound acid ***phosphatase*** from ***Tetrahymena*** pyriformis
AU Williams, John T.; Juo, Pei-Show
CS Dep. Biol., State Univ. New York, Potsdam, N. Y., USA
SO Biochim. Biophys. Acta (1976), 422(1), 120-6
CODEN: BBACAQ
DT Journal
LA English

L97 ANSWER 13 OF 14 BIOSIS COPYRIGHT 1997 BIOSIS DUPLICATE 5
AN 75:237019 BIOSIS
DN BA60:67015
TI THERMOTROPIC ***LIPID*** CLUSTERING IN ***TETRAHYMENA*** MEMBRANES.
AU WUNDERLICH F; RONAI A; SPETH V; SEELIG J; BLUME A
SO BIOCHEMISTRY 14 (17). 1975 3730-3735. CODEN: BICHAW ISSN: 0006-2960
LA Unavailable

L97 ANSWER 14 OF 14 CA COPYRIGHT 1997 ACS DUPLICATE 6
AB Temp.-responsive microsomes of the ciliate protozoan ***Tetrahymena*** were originally fractionated by step centrifugation on 2-layered, Mg2+-contg. sucrose gradients. Three fractions were obtained, which were termed smooth I, smooth II, and rough according to the appearance of the membrane vesicles upon

electron-microscopy. Smooth I, smooth II, and rough microsomes exhibited RNA/protein ratios of 0.09, 0.20, and 0.34; their phospholipid/protein ratios and their neutral ***lipid*** /phospholipid ratios were 0.52, 0.43 and 0.25, and 0.17, 0.18 and 0.13, resp. All 3 fractions contained equiv., low succinic dehydrogenase and 5'-nucleotidase activities. Glucose-6-***phosphatase*** and acid ***phosphatase*** were more concd. in smooth I membranes than in rough membranes. The reverse was true for ATPase. The smooth II membranes occupied an intermediate position except that their ATPase activity was the lowest of the 3 fractions. The specific activities of these enzymes of the 3 microsomal fractions were compared to those of homogenates of whole cells. Thin-layer chromatog. revealed a very similar polar and nonpolar ***lipid*** pattern of the 3 microsomal fractions. The major phospholipid compds. were phosphatidylethanolamine, glycerideaminoethylphosphonate and phosphatidylcholine, while diglycerides, an unknown neutral ***lipid*** compd., and triglycerides were the major apolar ***lipids*** . Gas-liq. chromatog. showed that the fatty acids were mainly even-numbered of C12-C18. The smooth I, smooth II, and rough membranes contained 65.2, 69.3, and 72.7% unsatd. fatty acids in their polar ***lipids*** , whereas only 52.7, 49.7, and 48.3% unsatd. acids were found in their apolar ***lipids*** , resp. The fatty acids were more unevenly distributed among the individual polar ***lipids*** than in the apolar ones.

AN 84:85926 CA
TI Membranes of Tetrahymena. IV. Isolation and characterization of temperature-responsive smooth and rough microsomal subfractions
AU Ronai, A.; Wunderlich, F.
CS Inst. Biol. II, Univ. Freiburg, Freiburg/Br., Ger.
SO J. Membr. Biol. (1975), 24(3-4), 381-99
CODEN: JMBBBO
DT Journal
LA English

63-188629 Aug. 4, 1988 L10: 2 of 2

ANTICANCER AGENT

INVENTOR: TATSUICHIRO OSHIO, et al. (2)
ASSIGNEE: NIPPON OIL & FATS CO LTD
APPL NO: 62-20494
DATE FILED: Feb. 2, 1987
PATENT ABSTRACTS OF JAPAN
ABS GRP NO: C550
ABS VOL NO: Vol. 12, No. 467
ABS PUB DATE: Dec. 7, 1988
INT-CL: A61K 35/56; A61K 37/22

ABSTRACT:

PURPOSE:To obtain an anticancer agent having low toxicity and excellent anticancer activity, by containing taurolipid produced by protozoa **Tetrahymena** as an active ingredient.

CONSTITUTION:Taurolipid expressed by the formula (R.sub.1 is H or OH; R.sub.2 is 11.approx.18C acyl produced by **Tetrahymena**) produced by a protozoa, **Tetrahymena** is contained as an active ingredient. The compound expressed by the formula naturally occurs and has no important side effects. So the compound is largely expected as a medicine. The taurolipid produced by **Tetrahymena** includes 2-(3-acyloxy-7,13-dihydroxyoctadecanoylamino)ethanesulfonic acid extracted from **Tetrahymena** pyriformis NT-1, or the like.
=>

=> d l11 1-8 all

US 05354855A Oct. 11, 1994 L11: 1 of 8
RNA Ribozyme which cleaves substrate RNA without formation of a convalent bond

INVENTOR: THOMAS R CECH, et al. (2)
ASSIGNEE:
APPL NO: US 84373792A
DATE FILED: Feb. 28, 1992
PATENT ABSTRACTS OF EUROPE
ABS GRP NO:
ABS VOL NO:
ABS PUB DATE:
INT-CL: C12N 15/11

ABSTRACT:

RNA enzymes or ribozymes can act as endoribonucleases, catalyzing the cleavage of RNA molecules with a sequence specificity of cleavage greater than that of known ribonucleases and approaching that of the DNA restriction endonucleases, thus serving as RNA sequence specific endoribonucleases. An example is a shortened form of the self-splicing ribosomal RNA intervening sequence of **Tetrahymena** (L-19 IVS RNA). Site-specific mutagenesis of the enzyme active site of the L-19 IVS RNA alters the substrate sequence specificity in a predictable manner, allowing a set of sequence-specific endoribonucleases to be synthesized. Varying conditions allow the ribozyme to act as a polymerase (nucleotidyltransferase), a dephosphorylase (acid phosphatase or phosphotransferase) or a sequence-specific endoribonuclease.

US 05037746A Aug. 6, 1991 L11: 2 of 8
RNA ribozyme polymerases, and methods

INVENTOR: THOMAS R CECH, et al. (2)
ASSIGNEE: UNIVERSITY PATENTS INC
APPL NO: US 32438589A
DATE FILED: Mar. 16, 1989
PATENT ABSTRACTS OF EUROPE
ABS GRP NO:
ABS VOL NO:
ABS PUB DATE:
INT-CL: C07H 15/12; C12N 9/12; C12N 15/11; C12P 19/34

ABSTRACT:

A catalytic RNA (ribozyme) derived from an intervening sequence (IVS) RNA of **Tetrahymena** thermophila will catalyze an RNA polymerization reaction in which pentacytidylic acid (C5) is extended by the successive addition of mononucleotides derived from a guanylyl-(3',5')-nucleotide (GpN). Cytidines or uridines are added to C5 to generate chain lengths of 10 to 11 nucleotides; longer products are also generated but at reduced efficiency. The reaction is analogous to that catalyzed by a replicase with C5 acting as the primer, GpNs as the nucleoside triphosphates, and a sequence in the ribozyme providing a template.

US 04374928A Feb. 22, 1983 L11: 3 of 8
Novel reductase

INVENTOR: NATHAN BROT, et al. (1)
ASSIGNEE: HOFFMANN LA ROCHE
APPL NO: US 26915081A
DATE FILED: Jun. 1, 1981
PATENT ABSTRACTS OF EUROPE
ABS GRP NO:
ABS VOL NO:
ABS PUB DATE:
INT-CL: C12P 21/00; C12N 9/02; C12Q 1/26; A61K 37/50

ABSTRACT:

A novel reductase which is an enzyme that can catalyze the reduction of methionine sulfoxide resides in proteins is described. The enzyme has been found in E. coli, Euglena gracilis, **Tetrahymena** pyriformis, Hela cells, rat tissue and spinach. The enzyme has an estimated molecular weight of about 18,000-20,000. It can be used to restore biological activity to proteins inactivated by oxidation of methionine residues.

EP 00708176A2 Apr. 24, 1996 L11: 4 of 8
Process for the cultivation of lipid-dependent tetrohymenids and a process for the production of biogenic products of lipid-dependent **tetrahymenids**

INVENTOR: THOMAS DR KIY, et al. (2)
ASSIGNEE: HOECHST AG
APPL NO: EP 95116245A
DATE FILED: Oct. 16, 1995
PATENT ABSTRACTS OF EUROPE
ABS GRP NO:
ABS VOL NO:
ABS PUB DATE:
INT-CL: C12N 1/10

ABSTRACT:

ABSTRACT DATA NOT AVAILABLE

WO 09515388A1 Jun. 8, 1995 L11: 5 of 8
RECOMBINANT BINDING PROTEINS AND PEPTIDES

INVENTOR: ANDREW DAVID GRIFFITHS, et al. (4)
ASSIGNEE: MEDICAL RES COUNCIL, et al. (5)
APPL NO: GB 09402662W
DATE FILED: Dec. 5, 1994
PATENT ABSTRACTS OF EUROPE
ABS GRP NO:
ABS VOL NO:
ABS PUB DATE:
INT-CL: C12N 15/62; C12N 15/13; C12N 15/12; C12N 15/70; C12N 1/21; C12N 9/00

ABSTRACT:

DNA constructs comprise a first exon sequence of nucleotides encoding a first peptide or polypeptide, a second exon sequence of nucleotides encoding a second peptide or polypeptide and a third sequence of nucleotides between the first and second sequences encoding a heterologous intron, for example that of **Tetrahymena** thermophila nuclear pre-rRNA, between RNA splice sites and a site-specific recombination sequence, such as loxP, within the intron, the exons together encoding a product peptide or polypeptide. Such constructs are of use in methods of production of peptides or polypeptides, transcription leading to splicing out of the intron enabling translation of a single chain product peptide or polypeptide. Isolated nucleic acid constructs consisting essentially of a sequence of nucleotides encoding a self-splicing intron with a site-specific recombination sequence within the intron, for use in creation of constructs for expression of peptides or polypeptides, are also provided.

WO 09416105A1 Jul. 21, 1994 L11: 6 of 8
RNA ASSAYS USING RNA BINARY PROBES AND RIBOZYME LIGASE

INVENTOR: PAUL M LIZARDI, et al. (4)
ASSIGNEE: PUBLIC HEALTH RESEARCH INST OF, et al. (1)
APPL NO: US 09400470W
DATE FILED: Jan. 14, 1994
PATENT ABSTRACTS OF EUROPE
ABS GRP NO:
ABS VOL NO:
ABS PUB DATE:
INT-CL: C12Q 1/68; C12P 19/34

ABSTRACT:

There are provided nucleic acid hybridization assays for RNA targets using RNA binary probes and a ribozyme ligase that is a stringent RNA-directed RNA ligase. Preferred assays include exponential amplification for signal generation. **Tetrahymena** ribozyme ligase is a preferred ligase for use in this invention. It may be tethered to hold it close to the ligation junction. One assay according to this invention is a ''tethered ligase chain reaction''. Also provided are kits for performing assays according to the invention.

WO 08603518A1 Jun. 19, 1986 L11: 7 of 8
PROCESS FOR PRODUCING FATTY ACIDS, PARTICULARLY gamma -LINOLENIC ACID FROM **TETRAHYMENA**, PRODUCTS OBTAINED THEREBY AND MEDICINAL OR ALIMENTARY PREPARATION CONTAINING gamma -LINOLENIC ACID OR DERIVATI

INVENTOR: RAYMOND DEVIS, et al. (5)
ASSIGNEE: INST NAT SANTE RECH MED, et al. (2)
APPL NO: BE 08500020W
DATE FILED: Nov. 25, 1985
PATENT ABSTRACTS OF EUROPE
ABS GRP NO:
ABS VOL NO:
ABS PUB DATE:
INT-CL: C12P 7/64; A61K 31/20; A23L 1/03

ABSTRACT:

The process for producing fatty acids is characterized in that it comprises at least the following steps: production of ciliated protozan **tetrahymena** in an appropriate nutricious medium and-extraction of total fatty acids of **tetrahymena**. The invention also relates to total fatty acids thus obtained, as well as to the gamma -linolenic acid or the dihomo- gamma -linolenic acid and their derivatives as well as to medicinal or alimentary preparations containing them as platelet anti-aggregation agent or anti-thrombotic agent.

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Enzymes prodn. by fermentation of Ciliates - in high cell density fermentation using medium contg. particulate nutrients

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ABSTRACT:

Process for high cell density fermentation of ciliates (species : **Tetrahymena**, Colpidium) in axenic medium, esp. for recovery of secreted natural substances, whereby the Ciliates are supplied with a cheap nutrient medium that contains the nutrient substances in predominantly particulate form, while the spent nutrient medium, enriched with useful natural substances, is recovered via a polypropylene membrane system with simultaneous retention of the cells in the fermentation vessel. USE/ADVANTAGE - The process is useful for technical scale prodn. of enzymes (useful in diagnostic procedures, food technology, analysis and molecular biology), melanin (which due to its UV absorbing characteristics is useful in the prodn. of sun protection creams) and extrusions. The process gives rapid cell multiplication to cell densities of over 2 x 107 cells/ml (corresponding to a dry mass of 50 g/l) to give high rates of prodn. of useful natural prods., and the same cells can be used over long periods of continuous prodn. without use of complex methods for separating the cells from the medium.
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